AMENDMENTS TO THE SPECIFICATION

In the Specification

Please substitute the following amended paragraph(s) and/or section(s) (deleted matter is shown by strikethrough and added matter is shown by underlining):

At page 37, lines 25-31, please replace the paragraph with the following:

The formation of coatings by light reactive deposition, silicon glass deposition and optical devices in general are described further in copending and commonly assigned U.S. Patent Application 09/715,935 to Bi et al., entitled "Coating Formation By Reactive Deposition," incorporated herein by reference, and in copending and commonly assigned PCT application designating the U.S. serial number PCT/US01/32413[[_____]] to Bi et al. filed on October 16, 2001, entitled "Coating Formation By Reactive Deposition," incorporated herein by reference.

At page 55, lines 17-25, please replace the paragraph with the following:

With respect to specific examples, the production of silicon oxide nanoparticles is described in copending and commonly assigned U.S. Patent Application Serial Number 09/085,514 to Kumar et al., entitled "Silicon Oxide Particles," incorporated herein by reference. This patent application describes the production of amorphous SiO_2. The production of titanium oxide nanoparticles and crystalline silicon dioxide nanoparticles is described in copending and commonly assigned, U.S. Patent Application Serial Number 09/123,255, now U.S. Patent 6,387,531 to Bi et al., entitled "Metal (Silicon) Oxide/Carbon Composites," incorporated herein by reference. In particular, this application describes the production of anatase and rutile TiO_2.

At page 55, lines 26-30, please replace the paragraph with the following:

In addition, nanoscale manganese oxide particles have been formed. The production of these particles is described in copending and commonly assigned U.S. Patent Application Serial No. 09/188,770, now U.S. Patent 6,506,493 to Kumar et al., entitled "Metal Oxide Particles," incorporated herein by reference. This application describes the production of MnO, Mn_2O_3, Mn_3O_4 and Mn_5O_8.

At page 56, lines 1-6, please replace the paragraph with the following:

Also, the production of vanadium oxide nanoparticles is described in U.S. Patent 6,106,798 to Bi et al., entitled "Vanadium Oxide Nanoparticles," incorporated herein by reference. Similarly, silver vanadium oxide nanoparticles have been produced, as described in U.S. Patent 6,225,007 to Horne et al., and copending and commonly assigned U.S. Patent Application 09/311,506, now U.S. Patent 6,391,494 to Reitz et al., both entitled "Metal Vanadium Oxide Particles," both of which are incorporated herein by reference.

At page 56, lines 7-13, please replace the paragraph with the following:

Furthermore, lithium manganese oxide nanoparticles have been produced by laser pyrolysis along with or without subsequent heat processing, as described in copending and commonly assigned U.S. Patent Applications Serial No. 09/188,768, now U.S. Patent 6,607,706 to Kumar et al., entitled "Composite Metal Oxide Particles," and 09/334,203, now U.S. Patent 6,482,374 to Kumar et al., entitled "Reaction Methods for Producing Ternary Particles," and U.S.

Patent 6,136,287 to Horne et al., entitled "Lithium Manganese Oxides and Batteries," all three of which are incorporated herein by reference.

At page 57, lines 6-20, please replace the paragraph with the following:

Rare earth dopants can be introduced into metal compositions using light reactive deposition and laser pyrolysis. In particular, submicron and nanoscale particles and corresponding coatings of rare earth metal oxide particles, rare earth doped metal/metalloid oxide particles, rare earth metal/metalloid sulfides and rare earth doped metal/metalloid sulfides, especially crystalline powders and coatings, are described in copending and commonly assigned U.S. Patent Application serial number 09/843,195, now U.S. Patent 6,692,660 to Kumar et al, entitled "High Luminescence Phosphor Particles," incorporated herein by reference. Suitable host materials for the formation of phosphors comprise, for example, ZnO, ZnS, Zn_2SiO_4, SrS, YBO_3, Y_2O_3, Al_2O_3, $Y_3Al_5O_{12}$ and $BaMgAl_{14}O_{23}$. Exemplary non-rare earth metals for activating phosphor particles as dopants comprise, for example, manganese, silver and lead. Exemplary rare earth metals for forming metal oxide phosphors comprise, for example, europium, cerium, terbium and erbium. Generally, heavy metal ions or rare earth ions are used as activators in phosphors. For phosphor applications, the particles are generally crystalline. The incorporation of rare earth and other dopants into amorphous particles and coating is described above.

At page 57, lines 21-29, please replace the paragraph with the following:

The production of iron, iron oxide and iron carbide is described in a publication by Bi et al., entitled "Nanocrystalline α-Fe, Fe_3C, and Fe_7C_3 produced by CO_2 laser pyrolysis," J. Mater. Res. Vol. 8, No. 7 1666-1674 (July 1993), incorporated herein by reference. The

production of nanoparticles of silver metal is described in copending and commonly assigned U.S. Patent Application Serial Number 09/311,506, now U.S. Patent 6,391,494 to Reitz et al., entitled "Metal Vanadium Oxide Particles," incorporated herein by reference. Nanoscale carbon particles produced by laser pyrolysis is described in a reference by Bi et al., entitled "Nanoscale carbon blacks produced by CO_2 laser pyrolysis," J. Mater. Res. Vol. 10, No. 11, 2875-2884 (Nov. 1995), incorporated herein by reference.

At page 58, lines 18-29, please replace the paragraph with the following:

The production of ternary nanoparticles of aluminum silicate and aluminum titanate can be performed by laser pyrolysis following procedures similar to the production of silver vanadium oxide nanoparticles described in copending and commonly assigned U.S. Patent Application Serial Number 09/311,506, now U.S. Patent 6,391,494 to Reitz et al., entitled "Metal Vanadium Oxide Particles," incorporated herein by reference. Suitable precursors for the production of aluminum silicate comprise, for vapor delivery, a mixture of aluminum chloride ($AlCl_3$) and silicon tetrachloride ($SiCl_4$) and, for aerosol delivery, a mixture of tetra(N-butoxy) silane and aluminum isopropoxide ($Al(OCH(CH_3)_2)_3$). Similarly, suitable precursors for the production of aluminum titanate comprise, for aerosol delivery, a mixture of aluminum nitrate ($Al(NO_3)_3$) and titanium dioxide (TiO_2) powder dissolved in sulfuric acid or a mixture of aluminum isopropoxide and titanium isopropoxide ($Ti(OCH(CH_3)_2)_4$).

At page 79, lines 17-28, please replace the paragraph with the following:

An optical structure with a gradient layer adjacent the core can also be used to form optical fibers with a gradient layer adjacent the core. The optical structure is used as a

preform from which the optical fiber is pulled by heating the preform to a softening point. Generally, for the pulling of fibers, the optical structure/preform is formed as an elongated structure. Preforms can be produced by light reactive deposition in the same way as other optical structures. The dimensions for the various layers can be adjusted to account for dimensional changes when the fiber is pulled. The resulting optical fiber will exhibit a reduction in light loss analogous to the waveguide. The formation of fiber preforms and corresponding optical fibers by light reactive deposition is described further in copending and commonly assigned PCT application designating the U.S. PCT/01/45762[[_____]] to Bryan et al. filed on October 26, 2001, entitled "Multilayered Optical Structures," incorporated herein by reference.